Do-it-yourself service precautions

If you perform maintenance yourself, be sure to follow the correct procedure given in these sections.

Items	Parts and tools
Battery condition (→P. 387)	• Warm water • Baking soda • Grease • Conventional wrench (for terminal clamp bolts)
Brake fluid level (→P. 386)	• FMVSS No.116 DOT 3 or SAE J1703 brake fluid • Rag or paper towel • Funnel (used only for adding brake fluid)
Engine coolant level (→P. 384)	• "Toyota Super Long Life Coolant" or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite and non-borate coolant with long-life hybrid organic acid technology. For the U.S.A.: "Toyota Super Long Life Coolant" is pre-mixed with 50% coolant and 50% deionized water. For Canada: "Toyota Super Long Life Coolant" is pre-mixed with 55% coolant and 45% deionized water. • Funnel (used only for adding coolant)

Items		Parts and tools
Engine oil level	(→P. 379)	• "Toyota Genuine Motor Oil" or equivalent • Rag or paper towel, funnel (used only for adding engine oil)
Fuses	(→P. 413)	• Fuse with same amperage rating as original
Headlight aim	(→P. 435)	• Phillips-head screwdriver
Radiator and condenser	(→P. 385)	—
Tire inflation pressure	(→P. 401)	• Tire pressure gauge • Compressed air source
Washer fluid	(→P. 390)	• Water washer fluid containing anti-freeze (for winter use) • Funnel

⚠ CAUTION

The engine compartment contains many mechanisms and fluids that may move suddenly, become hot, or become electrically energized. To avoid death or serious injury.

When working on the engine compartment:

- Keep hands, clothing, and tools away from the moving fan and engine drive belt.
- Be careful not to touch the engine, inverter, radiator, exhaust manifold, etc. right after driving as they may be hot. Oil and other fluids may also be hot.
- Do not leave anything that may burn easily, such as paper or rags, in the engine compartment.
- Do not smoke, cause sparks or expose an open flame to fuel or the battery. Fuel and battery fumes are flammable.
- Be extremely cautious when working on the battery. It contains poisonous and corrosive sulfuric acid.

CAUTION

■ **When working near the electric cooling fan or radiator grille**

Be sure the engine switch is “OFF”.
With the engine switch in “IG-ON” mode, the electric cooling fan may automatically start to run if the air conditioning is on and/or the coolant temperature is high. (→P. 385)

■ **Safety glasses**

Wear safety glasses to prevent flying or falling material, fluid spray, etc. from getting in the eyes.

NOTICE

■ **If you remove the air cleaner filter**

Driving with the air cleaner filter removed may cause excessive engine wear due to dirt in the air. Also a backfire could cause a fire in the engine compartment.

Hood

Release the lock from the inside of the vehicle to open the hood.

STEP 1


Pull the hood lock release lever.

The hood will pop up slightly.

STEP 2


Lift the hood catch and lift the hood.

CAUTION

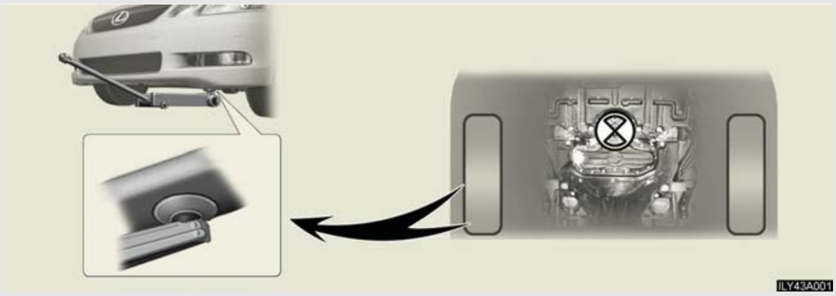
Pre-driving check

Check that the hood is fully closed and locked.
If the hood is not locked properly it may open while the vehicle is in motion and cause an accident, which may result in death or serious injury.

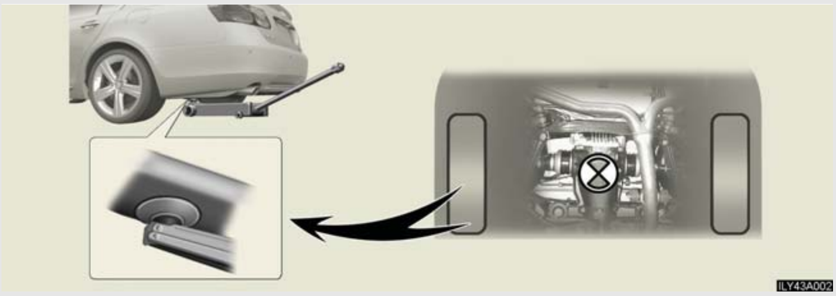
Positioning the jack

When raising your vehicle with the jack, position the jack correctly. Improper placement may damage your vehicle or cause injury.

▶ Front



▶ Rear



CAUTION

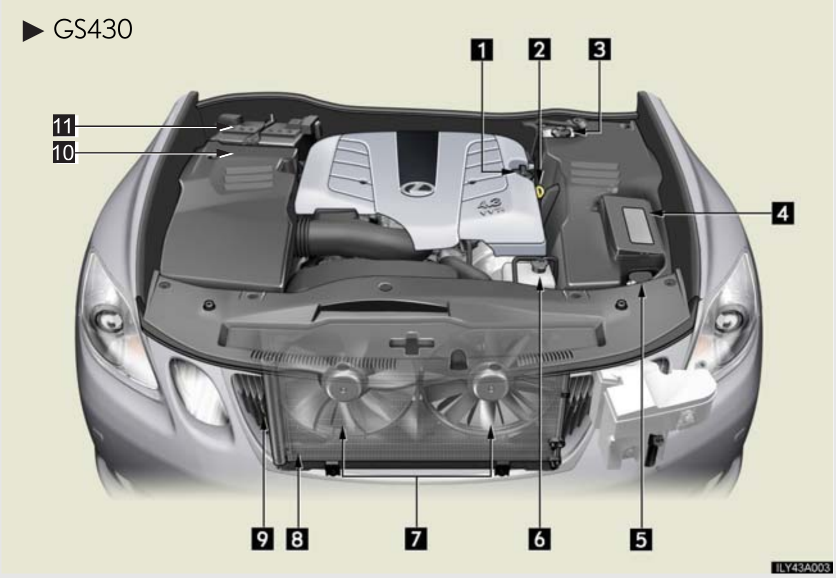
- **When raising your vehicle**

  Make sure to observe the following to reduce the possibility of death or serious injury.

  - Do not put any part of your body or get underneath the vehicle supported only by the jack.
    Always use automotive jack stands or a solid, level, surface.
  - Do not start the engine while the vehicle is supported by the jack.
  - Stop the vehicle on level firm ground, firmly set the parking brake and put the shift lever in “P”.
  - Make sure to set the jack properly at the jack point.
    Raising the vehicle with an improperly positioned jack will damage the vehicle and may cause the vehicle to fall off the jack.
  - Do not raise the vehicle while someone is in the vehicle.
  - When raising the vehicle, do not place any objects on top of or underneath the jack.

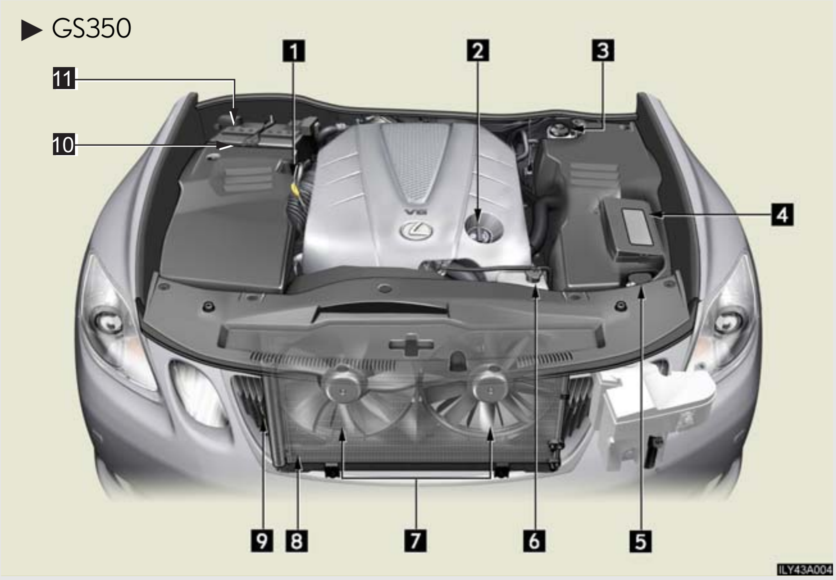
Engine compartment

▶ GS430



1. Engine oil filler cap (→P. 379)
2. Engine oil level dipstick (→P. 380)
3. Brake fluid reservoir (→P. 386)
4. Fuse box (→P. 413)
5. Washer fluid tank (→P. 390)
6. Engine coolant reservoir (→P. 384)
7. Electric cooling fans
8. Condenser (→P. 385)
9. Radiator (→P. 385)
10. Fuse box (→P. 413)
11. Battery (→P. 387)

▶ GS350



1 Engine oil level dipstick (→P. 379)

2 Engine oil filler cap (→P. 380)

3 Brake fluid reservoir (→P. 386)

4 Fuse box (→P. 413)

5 Washer fluid tank (→P. 390)

6 Engine coolant reservoir (→P. 384)

7 Electric cooling fans

8 Condenser (→P. 385)

9 Radiator (→P. 385)

10 Fuse box (→P. 413)

11 Battery (→P. 387)

Engine compartment cover

Removing the cover

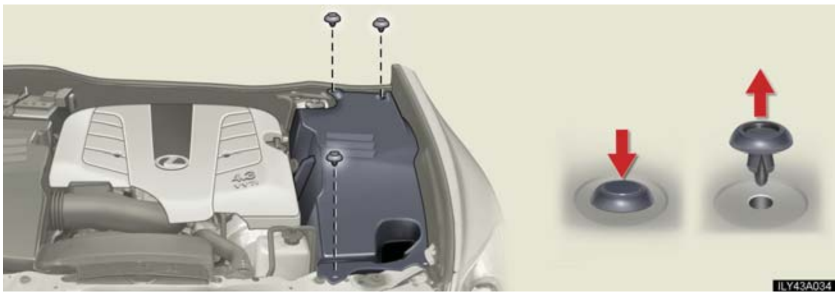
▶ Front



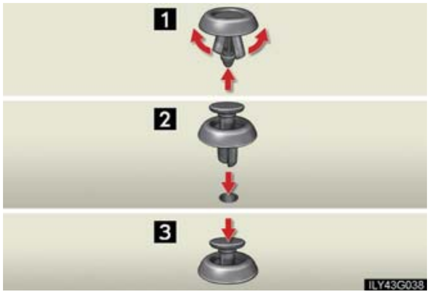
▶ Right-hand side



▶ Left-hand side



Installing the clips



1 Open
2 Insert
3 Press

Engine oil

With the engine at operating temperature and turned off, check the oil level on the dipstick.

Checking the engine oil

STEP 1 Park the vehicle on level ground. After turning off the engine, wait a few minutes for the oil to drain back into the bottom of the engine.

STEP 2 Hold a rag under the end and pull the dipstick out.

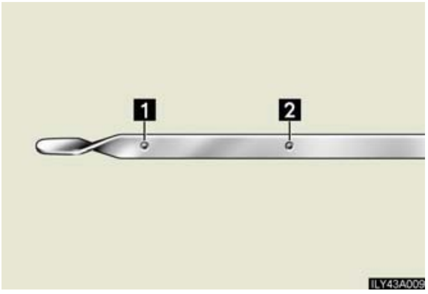


STEP 3 Wipe the dipstick clean.

STEP 4 Reinsert the dipstick fully.

STEP 5 Holding a rag under the end, pull the dipstick out and check the oil level.

STEP 6 Wipe the dipstick and reinsert it fully.



1 Low

2 Full

Adding engine oil

If the oil level is below or near the low level mark, add engine oil of the same type as already in the engine.



Make sure to check the oil type and prepare the items needed before adding oil.

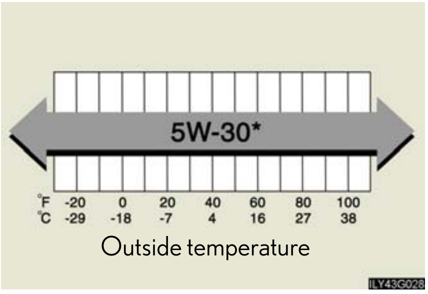
Oil grade	ILSAC multigrade engine oil
Oil quantity (Low → Full)	1.6 qt. (1.5 L, 1.3 Imp. qt.)
Items	Clean funnel

STEP 1 Remove the oil filler cap.

STEP 2 Add engine oil slowly, checking the dipstick.

STEP 3 Install the filler cap, turning it clockwise until you hear a click.

Recommended viscosity



SAE 5W-30 is the best choice for good fuel economy, and good starting in cold weather.

*: If SAE 5W-30 oil is not available, SAE 10W-30 may be used. However, it should be replaced with SAE 5W-30 at the next oil change.

How to read oil container labels

Some oil containers are labeled with ILSAC certification marks that help you to select the proper oil.



Engine oil consumption

- The amount of engine oil consumed depends on the oil viscosity, the quality of the oil and the way the vehicle is driven.
- More oil is consumed under driving conditions such as high speeds and frequent acceleration and deceleration.
- A new engine consumes more oil.
- When judging the amount of oil consumption, keep in mind that the oil may have become diluted, making it difficult to judge the true level accurately.
- Oil consumption: Max. 1.1 qt./600 miles, 0.9 Imp.qt./600 miles (1.0 L per 1000 km). If the vehicle consumes more than this amount, contact your Lexus dealer.

Resetting the engine oil maintenance data (U.S.A. only)

Perform the following steps:

STEP 1 Press the "DISP" switch (→P. 114) to change the multi-information display to blank.

STEP 2 Turn the engine switch to "OFF" mode.

STEP 3 Turn the engine switch to "IG-ON" mode with the trip meter reset button held down.

STEP 4 Keep pressing the button for longer than 7 seconds after the engine switch is in "IG-ON" mode.



After the above operation, the message shown in the left will appear on the display.

The master warning light and tone will turn on. After 5 seconds, the system reset is completed.

CAUTION

- **Used engine oil**
  - Used engine oil contains potentially harmful contaminants which may cause skin disorders such as inflammation or skin cancer, so care should be taken to avoid prolonged and repeated contact. To remove used engine oil from your skin, wash thoroughly with soap and water.
  - Dispose of used oil and filters only in a safe and acceptable manner. Do not dispose of used oil and filters in household trash, in sewers or onto the ground. Call your Lexus dealer, service station or auto parts store for information concerning recycling or disposal.
  - Do not leave used engine oil within the reach of children.

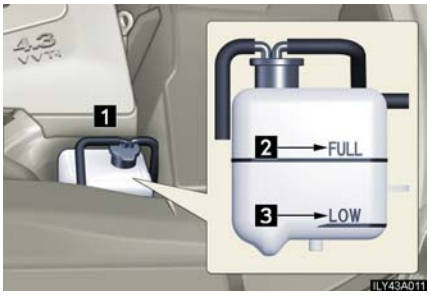
NOTICE

- **To prevent serious engine damage**

  Check the oil level on regular basis.
- **When replacing the engine oil**
  - Be careful not to spill engine oil on the vehicle components.
  - Avoid overfilling, or the engine could be damaged.
  - Check the oil level on the dipstick every time you refill the vehicle.
  - Be sure the engine oil filler cap is properly retightened.

Engine coolant

The coolant level is satisfactory if it is between the “FULL” and “LOW” lines on the reservoir when the engine is cold.



1 Reservoir cap

2 FULL

3 LOW

If the level is on or below the “LOW” line, add coolant up to the “FULL” line.

If the coolant level drops within a short time after replenishing

Visually check the radiator, hoses, engine coolant filler cap, radiator cap, drain cock and water pump.
If you cannot find a leak, have your Lexus dealer pressure test the cap and check for leaks in the cooling system.

Coolant selection

Only use “Toyota Super Long Life Coolant” or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, and non-borate coolant with long-life hybrid organic acid technology.

U.S.A.: “Toyota Super Long Life Coolant” is a mixture of 50% coolant and 50% deionized water. (Enabled: -31°F [-35°C])

Canada: “Toyota Super Long Life Coolant” is a mixture of 55% coolant and 45% deionized water. (Enabled: -44°F [-42°C])

For more details about engine coolant, contact your Lexus dealer.

CAUTION

n **When the engine is hot**

Do not remove the radiator cap.
The cooling system may be under pressure and may spray hot coolant if the cap is removed, causing burns or other injuries.

NOTICE

n **When adding the coolant**

Coolant is neither plain water not straight antifreeze. The correct mixture of water and anti freeze must be used to provide proper lubrication, corrosion protection and cooling. Be sure to read the antifreeze or coolant label.

n **If you spill coolant**

Be sure to wash it off with water to prevent it damage to parts or paint.

Radiator and condenser

Check the radiator and condenser and clear any foreign objects.
If either of the above parts are extremely dirty or you are not sure of their condition, have your vehicle checked by your Lexus dealer.

CAUTION

n **When the engine is hot**

Do not remove the radiator cap. The cooling system may be under pressure and may spray hot coolant if the cap is removed, causing burns or other injuries.

Brake fluid

Checking fluid level



The brake fluid level should be between the “MAX” and “MIN” lines on the tank.

Make sure to check the fluid type and prepare the necessary items.

Adding fluid

Fluid type	FMVSS No.116 DOT 3 or SAE J1703 brake fluid
Items	Clean funnel

Brake fluid can absorb moisture from the air

Excess moisture in the fluid can cause a dangerous loss of braking efficiency. Use only newly opened brake fluid.

CAUTION

When filling the reservoir

Take care because brake fluid can harm your hands or eyes and damage painted surfaces.
If fluid gets in your eyes, flush your eyes with clean water immediately.

If you still experience discomfort, see a doctor.

NOTICE

If the fluid level is low or high

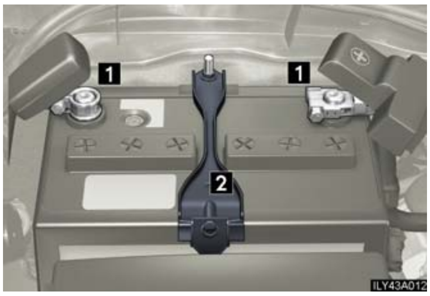
It is normal for the brake fluid level to go down slightly as the brake pads wear or when the fluid level in the accumulator is high.
If the reservoir needs frequent refilling, it may indicate a serious problem.

Battery

Check the battery as follows.

Battery exterior

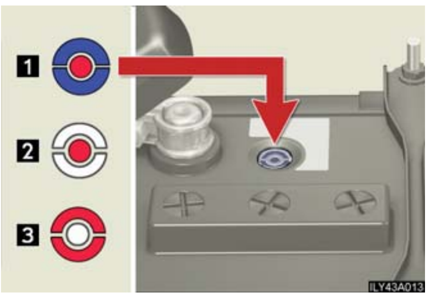
Make sure that the battery terminals are not corroded and that there are no loose connections, cracks, or loose clamps.



1. Terminals
2. Hold-down clamp

Checking battery condition

Check the battery condition by the indicator color.



1. Blue: Good condition
2. White: Charging necessary. Have the battery checked by your Lexus dealer.
3. Red: Not working properly, have the battery checked by your Lexus dealer.

Before recharging

When recharging, the battery produces hydrogen gas which is flammable and explosive. Therefore, before recharging:

- If recharging with the battery installed on the vehicle, be sure to disconnect the ground cable.
- Make sure the engine switch on the charger is off when connecting and disconnecting the charger cables to the battery.

After recharging/reconnecting the battery

In some cases, the engine may not start. Follow one or both of the following procedures:

- After opening and closing the driver's door, wait 10 seconds then attempt to start the engine. (If the system does not start first time, repeat the procedure.)
- With the shift lever in “P” and the engine switch in the “OFF” mode, open and close any door, then attempt to start the engine.

If the system will not start even after multiple attempts at both methods, contact your Lexus dealer.

CAUTION

Chemicals in the battery

A battery contains poisonous and corrosive sulfuric acid and may produce hydrogen gas which is flammable and explosive. To reduce the risk of death or serious injury, take the following precautions while working on or near battery:

- Do not cause sparks by touching the battery terminals with tools.
- Do not smoke or light a match near the battery.
- Avoid contact with eyes, skin and clothes.
- Never inhale or swallow electrolyte.
- Wear protective safety glasses when working near the battery.
- Keep children away from the battery.

Where to safety charge the battery

Always charge the battery in an open area. Do not charge the battery in a garage or closed room where there is not sufficient ventilation.

How to recharge the battery

Only perform a slow charge (5A or less). The battery may explode if charged at a quicker rate.

Emergency measures regarding electrolyte

- If electrolyte gets in your eyes
  Flush your eyes with clean water for at least 15 minutes and get immediate medical attention. If possible, continue to apply water with a sponge or cloth while traveling to the nearest medical facility.
- If electrolyte gets on your skin
  Wash the affected area thoroughly. If you feel pain or a burning sensation, seek medical attention immediately.
- If electrolyte gets on your clothes
  It can soak through clothing on to your skin. Immediately take off the clothing and follow the procedure above if necessary.
- If you accidentally swallow electrolyte
  Drink a large quantity of water or milk. Follow with milk of magnesia, beaten raw egg or vegetable oil. Get emergency medical attention immediately.

NOTICE

- **When recharging the battery**

  Never recharge the battery while the engine is running. Also, be sure all accessories are turned off.

Washer fluid



If any washer does not work or the warning message appears on the multi-information display, the washer tank may be empty. Add washer fluid.

NOTICE

- **Do not use any fluid other than washer fluid**

  Do not use soapy water or engine antifreeze instead of washer fluid.
  Doing so may cause streaking on the vehicle's painted surfaces.

- **Diluting washer fluid**

  Dilute washer fluid with water as necessary.
  Refer to the freezing temperatures listed on the washer fluid tank.

Tires

Replace or rotate tires in accordance with maintenance schedules and treadwear.

n Checking tires



1 New tread

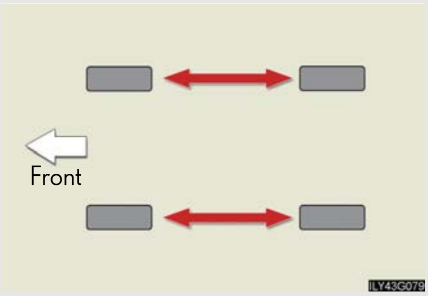
2 Treadwear indicator

3 Worn tread

The location of treadwear indicators is shown by the “TWI” or “Δ” marks, etc., molded on the sidewall of each tire.

Check spare tire condition and inflation pressure if not rotated.

n Tire rotation



Rotate the tires in the order shown.

To equalize tire wear and extend tire life, Lexus recommends that tire rotation is carried out at the same interval as tire inspection.

n The tire pressure warning system

Your Lexus is equipped with a tire pressure warning system that uses tire pressure warning valves and transmitters to detect low tire inflation pressure before serious problems arise. (→P. 452, 456)

Installing tire pressure warning valves and transmitters

When replacing tires or wheels, tire pressure warning valves and transmitters must also be installed.

When new tire pressure warning valves and transmitters are installed, new tire pressure warning valve and transmitter ID codes must be registered in the tire pressure warning computer and tire pressure warning system must be initialized. Have tire pressure warning valve and transmitter ID code registered by your Lexus dealer. (→P. 394)

Initializing the tire pressure warning system

■ The tire pressure warning system must be initialized in the following circumstances:

- When changing the tire inflation pressure by changing traveling speed or load weight, etc.
- When changing the tire size.

When the tire pressure warning system is initialized, the current tire inflation pressure is set as the pressure benchmark.

n How to initialize the tire pressure warning system

STEP 1 Park the vehicle in safe place and turn the engine switch to "OFF" mode.

While the vehicle is moving, initialization is not performed.

STEP 2 Adjust the tire inflation pressure to the specified cold tire inflation pressure level. (→P. 505)

Make sure to adjust the tire pressure to the specified cold tire inflation pressure level. The tire pressure warning system will operate based on this pressure level.

STEP 3 Turn the engine switch to "IG-ON" mode.

STEP 4



Push and hold the tire pressure warning reset switch until the tire pressure warning light blinks slowly three times and the message "PRESSURE INITIAL" appears on the multi-information display.

STEP 5 Wait for a few minutes with the "IG-ON" mode, and then turn engine switch to the "OFF" mode.

Registering and selecting ID codes

n Registering ID codes

2 sets of tire pressure warning valve and transmitter ID codes can be registered. Once a second set of tires is registered at “2nd”, you can switch between tire set settings simply by pressing the tire pressure warning select switch.

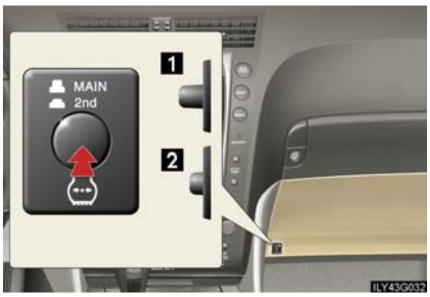
There are 2 settings:

“MAIN” position: The ID code of the tire pressure warning valve and transmitter on the tires originally installed on the vehicle is registered.

“2nd” position: The ID code is not registered. When you replace a new set of tires, purchase tire pressure warning valves and transmitters from your Lexus dealer and have the new ID code registered by your Lexus dealer.

n Selecting ID codes

When replacing tires, make sure to select the ID code set that matches the new tire set. If the tire pressure warning select switch is set to wrong tire setting, the tire pressure warning system will not operate properly. After about 20 minutes, the tire pressure warning light comes on after blinking for 1 minute to indicate a system malfunction.



1 “MAIN”

2 “2nd”

When to replace your vehicle's tires

Tires should be replaced if:

- You have tire damage such as cuts, splits, cracks deep enough to expose the fabric or bulges indicating internal damage
- A tire goes flat repeatedly or cannot be properly repaired due to the size or location of a cut or other damage

If you are not sure, consult with your Lexus dealer.

Replacing tires and wheels

If the ID code of the tire pressure warning valve and transmitter is not registered, the tire pressure warning system will not work properly. After about 20 minutes, the tire pressure warning light comes on after blinking for 1 minute to indicate a system malfunction.

Tire life

Any tire over 6 years old must be checked by a qualified technician even if they have seldom or never been used or damage is not obvious.

If the tread wears down below 0.16 in. (4 mm) on snow tires

The effectiveness of snow tires is lost.

Low profile tires (245/40R18, P245/40R18 and 245/40ZR18 tires)

Generally, low profile tires will wear more rapidly and tire grip performance will be reduced on snowy and/or icy roads when compared to standard tires. Be sure to use snow tires or snow chains on snowy and/or icy roads and drive carefully at a speed appropriate for road and weather conditions.

■ **Maximum load of tire**

Check that the maximum load of the replaced tire is greater than 1/2 of the Gross Axle Weight Ratings (GAWR) of either the front axle or the rear axle, whichever is greater.
As for the maximum load of the tire, see the load limit at maximum cold tire inflation pressure mentioned on the sidewall of the tire, and as for the Gross Axle Weight Ratings (GAWR), see the Certification Label. (→P. 401, 511).

■ **Tire types**

1 Summer tires

Summer tires are high-speed performance tires best suited to highway driving under dry conditions. Since summer tires do not have the same traction performance as snow tires, summer tires are inadequate for driving on snow-covered or icy roads. For driving on snow-covered roads or icy roads, the use of snow tires is recommended. When installing snow tires, be sure to replace all four tires.

2 All season tires

All season tires are designed to provide better traction in snow and to be adequate for driving in most winter conditions, as well as for use year round. All season tires, however, do not have adequate traction performance compared with snow tires in heavy or loose snow. Also, all season tires fall short in acceleration and handling performance compared with summer tires in highway driving.

3 Snow tires

For driving on snow-covered roads or icy roads, we recommend using snow tires. If you need snow tires, select tires of the same size, construction and load capacity as the originally installed tires. Since your vehicle has radial tires as original equipment, make sure your snow tires also have radial construction. Do not install studded tires without first checking local regulations for possible restriction. Snow tires should be installed on all wheels. (→P. 172)

■ **Initializing the tire pressure warning system**

Initialize the tires with the tire inflation pressure adjusted to the specified level.

If you push the tire pressure warning reset switch accidentally

If initialization is performed, adjust the tire inflation pressure to the specified level and initialize the system again.

When the initialization of the tire pressure warning system has failed

Initialization can be completed in a few minutes. However, in the following cases, the settings have not been recorded and the system will not operate properly. If repeated attempts to record tire inflation pressure settings are unsuccessful, have the vehicle inspected by your Lexus dealer.

- When operating the tire pressure warning reset switch, the tire pressure warning light does not flash 3 times and the setting message does not appear on the multi-information display.
- After carrying out the initialization procedure, the tire pressure warning light blinks for 1 minute after driving for 20 minutes.

Routine tire inflation pressure checks

The tire pressure warning system does not replace routine tire inflation pressure checks. Make sure to check tire inflation pressure as part of your routine of daily vehicle checks.

Tire pressure warning system certification

▶ For vehicles sold in the U.S.A.

NOTE:
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTICE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING:
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

▶ For vehicles sold in Canada

NOTE:
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CAUTION

- **When inspecting or replacing tires**

  Observe the following precautions to prevent accidents. Failure to do so may cause damage to parts of the drive train, as well as dangerous handling characteristics, which may lead to fatal or injury accidents.

  - Do not mix tires of different makes, models, tread patterns or treadwear.
  - Do not use tire sizes other than those recommended by Lexus.
  - Do not mix radial, bias-belted, or bias-ply tires.
  - Do not mix summer, all season and winter tires.

- **When initializing the tire pressure warning system**

  Do not push the tire pressure warning reset switch without first adjusting the tire inflation pressure to the specified level. Otherwise, the tire pressure warning light may not come on even if the tire inflation pressure is low, or it may come on when the tire inflation pressure is actually normal.

NOTICE

- **Repairing or replacing tires, wheels and tire pressure warning valves and transmitters**

  When removing or fitting the wheels, tires or the tire pressure warning valve and transmitter, contact your Lexus dealer as the tire pressure warning valve and transmitter may be damaged if not handled correctly.

- **To avoid damaging the tire pressure warning valves and transmitters**

  Do not use liquid sealants on flat tire.

⚠ NOTICE

■ **Driving on rough roads**

Take particular care when driving on roads with loose surfaces or potholes.
These conditions may cause losses in tire inflation pressure, reducing the cushioning ability of the tires. In addition driving on rough roads may cause damage to the tires themselves, as well as the vehicle's wheels and body.

■ **Low profile tires (245/40R18, P245/40R18 and 245/40ZR18 tires)**

Low profile tires may cause greater damage than usual to the tire wheel when receiving impact from the road surface. Therefore pay attention to the following:

- Be sure to use proper tire inflation pressure. If tires are under-inflated, they may be damaged more severely.
- Avoid hot holes, uneven pavement, curbs and other road hazards. Failure to do so can lead to severe tire and wheel damage.

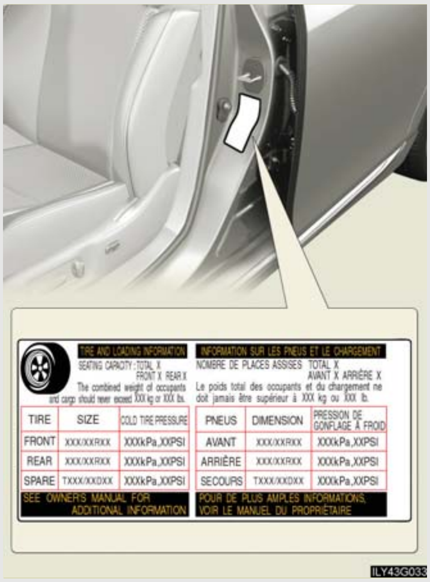
■ **If tire inflation pressures become low while driving**

Do not continue driving, or your tires and/or wheels may be ruined.

Tire inflation pressure

n Tire inflation pressure

The recommended cold tire inflation pressure and tire size is displayed on the tire and loading information label. (→P. 505)



Inspection and adjustment procedure



1 Tire valve
2 Tire pressure gauge

STEP 1 Remove the tire valve cap.

STEP 2 Press the tip of the tire pressure gauge onto the tire valve.

STEP 3 Read the pressure using the graduations of the gauge.

STEP 4 If the tire inflation pressure is not within the recommended levels, adjust tire pressure.
If you add too much air, press the center of the valve to lower.

STEP 5 After completing the tire inflation pressure measurement and adjustment, apply soapy water to the valve and check for leakage.

STEP 6 Reinstall the tire valve cap.

Tire inflation pressure check interval

You should check tire inflation pressure every two weeks, or at least once a month. If equipped, do not forget to check the spare.

Effects of incorrect tire inflation pressure

Driving with incorrect tire inflation pressure may result in the following:

- Reduced fuel efficiency
- Reduced driving comfort and tire life
- Reduced safety
- Damage to the drive train

If a tire needs frequent refilling, have it checked by your Lexus dealer.

Instructions for checking tire inflation pressure

When checking tire inflation pressure, observe the following:

- Check only when the tires are cold.
  If your vehicle has been parked for at least 3 hours and has not been driven for more than 1 mile or 1.5 km, you will get an accurate cold tire inflation pressure reading.
- Always use a tire pressure gauge.
  The appearance of the tire can be misleading. In addition, tire inflation pressures that are even just a few pounds off can degrade ride and handling.
- Do not bleed or reduce tire inflation pressure after driving. It is normal for the tire inflation pressure to be higher after driving.
- Never exceed the vehicle capacity weight.
  Passengers and luggage weight should be placed so that the vehicle is balanced.

CAUTION

■ **Proper inflation is critical to save tire performance**

Keep your tires properly inflated. Otherwise, the following conditions may occur and result in an accident causing death or serious injury.

- Excessive wear
- Uneven wear
- Poor handling
- Possibility of blowouts resulting from overheated tires
- Poor sealing of the tire bead
- Wheel deformation and/or tire separation
- A greater possibility of tire damage from road hazards

NOTICE

■ **When inspecting and adjusting tire inflation pressure**

Be sure to reinstall the tire valve caps.
Without the valve caps, dirt or moisture could get into the valve and cause air leakage, which could result in an accident. If the caps have been lost, replace them as soon as possible.

Wheels

If a wheel is bent, cracked or heavily corroded, it should be replaced. Otherwise, the tire may separate from the wheel or cause loss of handling control.

Wheel selection

When replacing wheels, care should be taken to ensure that they are equivalent to those removed in load capacity, diameter, rim width, and offset.
Replacement wheels are available at your Lexus dealer.

Lexus does not recommend using:

- Wheels of different sizes or types
- Used wheels
- Bent wheels that have been straightened

Aluminum wheel precautions

- Use only Lexus wheel nuts and wrenches designed for use with your aluminum wheels.
- When rotating, repairing or changing your tires, check that the wheel nuts are still tight after driving 1000 miles (1600 km).
- Be careful not to damage the aluminum wheels when using tire chains.
- Use only Lexus genuine balance weights or equivalent and a plastic or rubber hammer when balancing your wheels.

When replacing wheels

The wheels of your Lexus are equipped with tire pressure warning valves and transmitters that allow the tire pressure warning system to provide advanced warning in the event of a loss in tire inflation pressure. Whenever wheels are replaced, the tire pressure warning valves and transmitters must be switched over from the old wheels. (→P. 392)

CAUTION

■ **When replacing wheels**

- Do not use wheels that are a different size from those recommended in the Owner's Manual, as this may result in loss of handling control.
- Never use an inner tube in a leaking wheel which is designed for a tubeless tire. Doing so may result in an accident, causing death or serious injury.

NOTICE

■ **Replacing tire pressure warning valves and transmitters**

- Because tire repair or replacement may affect the tire pressure warning valves and transmitters, make sure to have tires serviced by your Lexus dealer. In addition, make sure to purchase your tire pressure warning valves and transmitters at your Lexus dealer.
- Ensure that only genuine Lexus wheels are used on your vehicle.
  Tire pressure warning valves and transmitters may not work properly with non-genuine wheels.

Air conditioning filter

The air conditioning filter must be cleaned or changed regularly to maintain air conditioning efficiency.

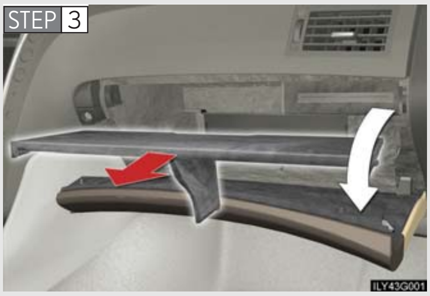
Removal method

STEP 1 Set the air conditioning system to recirculated mode.

The air conditioning filter case cannot be removed with the system in the outside air mode.

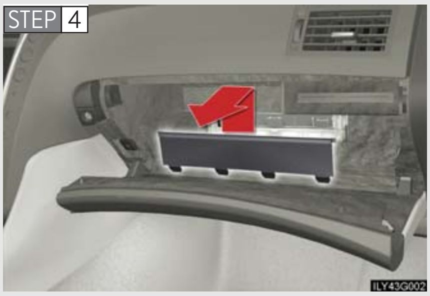
STEP 2 Turn the engine switch to "OFF" mode.

STEP 3



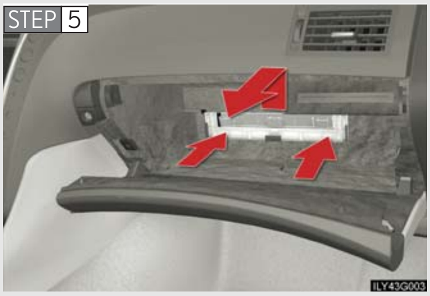
Open the glove box and remove the partition.

STEP 4



Remove the filter cover.

STEP 5



Push the tabs and remove the filter case.

■ Cleaning method

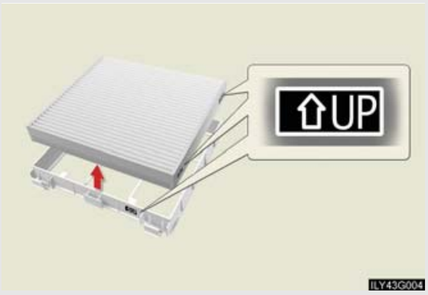


If the filter is dirty, clean by blowing compressed air through the filter from the downward side.

Hold the air gun 2 in. (5cm) from the filter and blow for approximately 2 minutes at 72 psi (500 kPa, 5.0 kgf/cm^2 or bar).

If it is not available, have the filter cleaned by your Lexus dealer.

■ Replacement method



Remove the air conditioning filter from the filter case and replace it with a new one.

The "↑UP" marks shown on the filter and the filter case should be pointing up.

Checking interval

Inspect and replace the air conditioning filter according to the maintenance schedule. In dusty areas or areas with heavy traffic flow, early replacement may be required. (For scheduled maintenance information, refer to the “Warranty and Services Guide/Owner's Manual Supplement/Scheduled Maintenance”.)

If air flow from the vents decreases dramatically

The filter may be clogged. Check the filter and replace if necessary.

NOTICE

To prevent damage to the system

- When using the air conditioning system, make sure that a filter is always installed.
- When cleaning the filter, do not clean the with water.

Electronic key battery

Replace the battery with a new one if it is discharged.

You will need the following items:

- Flathead screwdriver
- Small Phillips-head screwdriver
- Lithium battery (CR1632)

Replacing the battery

STEP 1



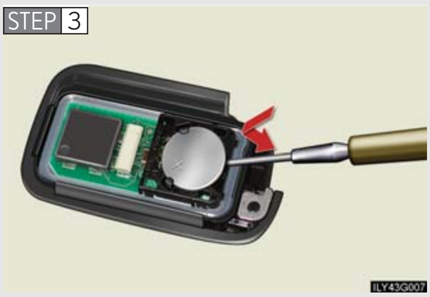
Take out the mechanical key.

STEP 2



Remove the cover.

STEP 3



Remove the depleted battery.

Insert a new battery with the "+" terminal facing up.

- **If the electronic key battery is discharged**

  The following symptoms may occur.

  - The smart access system with push-button start and wireless remote control will not function properly.
  - The operational range is reduced.

- **Use a CR1632 lithium battery**

  - Batteries can be purchased at your Lexus dealer, jewelers, or camera stores.
  - Replace only with the same or equivalent type recommended by a Lexus dealer.
  - Dispose of used batteries according to the local laws.

CAUTION

- **Removed battery and other parts**

  Keep away from children.
  These parts are small and if swallowed by a child they can cause choking.

NOTICE

- **For normal operation after replacing the battery**

  Observe the following precautions to prevent accidents.

  - Always work with dry hands.
    Moisture may cause the battery to rust.
  - Do not touch or move any other components inside the electronic key.
  - Do not bend the battery terminals.

Checking and replacing fuses

If any of the electrical components do not operate, a fuse may have blown. If this happens, check and replace the fuses as necessary.

STEP 1 Turn the engine switch to "OFF" mode.

STEP 2 Remove the engine compartment cover if necessary.
→P. 378

STEP 3 Open the fuse box cover.

▶ Engine compartment (type A)



Push the tabs in and lift the lid off.

▶ Engine compartment (Type B)



Push the tabs in and lift the lid off.

▶ Driver's side instrument panel



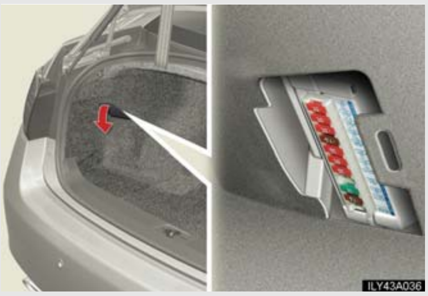
Remove the lid.

▶ Passenger's side instrument panel



Remove the lid.

▶ Luggage compartment



Remove the cover.

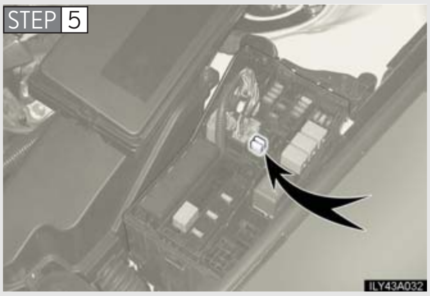
▶ Luggage compartment (vehicles with active stabilizer suspension system)



Remove the lid.

STEP 4 After a system failure, see "Fuse layout and amperage ratings" (→P. 418) for details about which fuse to check.

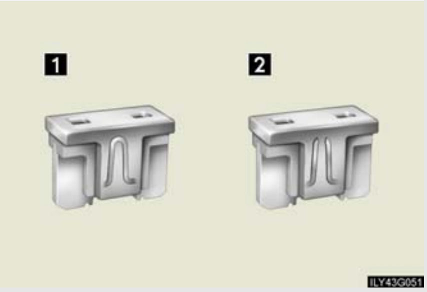
STEP 5



Remove the fuse with the pull-out tool.

STEP 6 Check if the fuse has blown.

▶ Type A

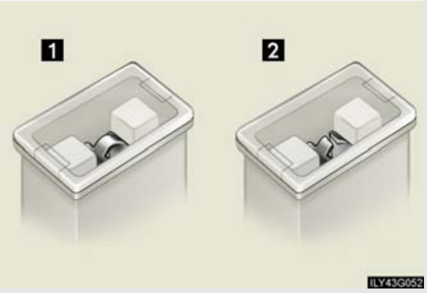


1 Normal fuse

2 Blown fuse

Replace it with one of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

▶ Type B

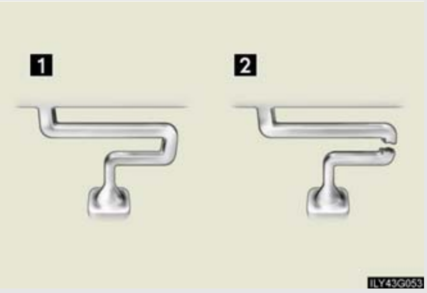


1 Normal fuse

2 Blown fuse

Replace it with one of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

▶ Type C

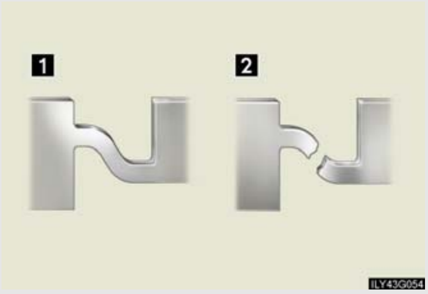


1 Normal fuse

2 Blown fuse

Contact your Lexus dealer.

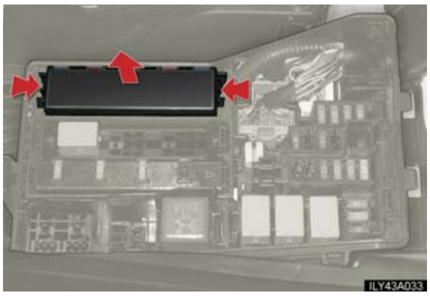
▶ Type D



1 Normal fuse
2 Blown fuse

Contact your Lexus dealer.

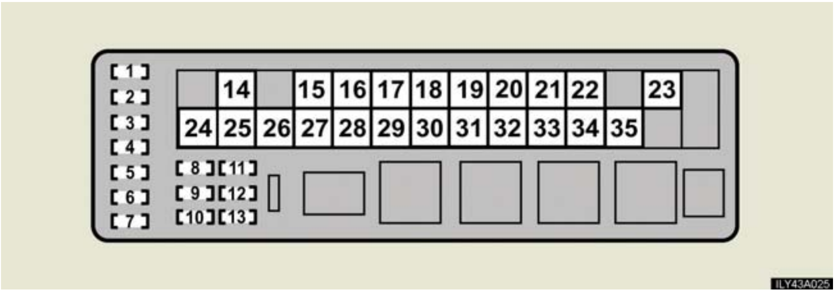
Removing the front controller (engine compartment: type B)



Lift the lid off while pushing the tabs on either side.

Fuse layout and amperage ratings

n Engine compartment (Type A)

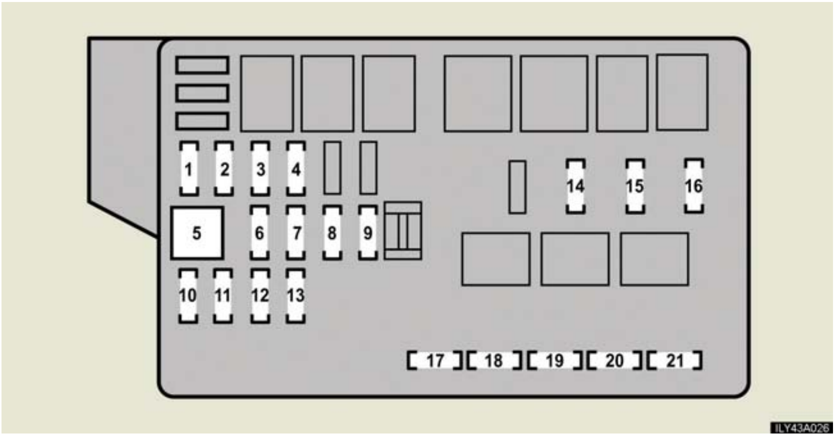


Fuse		Ampere	Circuit
1	ECU-B	10	VGRS, EPS, Driver's seat switch module, Lexus Link System ECU
2	ABS MAIN3	10	ECB system
3	TURN-HAZ	15	Turn signal lights, Emergency flashers
4	IG2 MAIN	20	IG2, GAUGE and IGN
5	RND NO.2	30	Audio system
6	D/C CUT	20	DOME and MPX-B
7	RND NO.1	30	Audio system
8	MPX-B	10	Multiplex communication system, Front controller, Door control system (Power door lock system, Door courtesy lights, Power windows, Power rear view mirror control system, Outside rear view mirror heaters), Power seat system, Steering sensors, ECB system, Power tilt and telescopic steering wheel, Gauges and meters, Combination switch

Fuse		Ampere	Circuit
9	DOME	10	Foot lights, Vanity lights, Gauges and meters, Steering spot light, Steering switch illumination, Rear personal lights, Automatic transmission selector lever spot light, Front personal lights
10	CDS	10	NOIS FILTER
11	ABS MAIN2	10	ECB system
12	ABS MOTOR	30	ABS
13	ABS MAIN1	10	Capacitor
14	E/G-B	60	FR CTRL BATT, ECTS and ALT-S
15	ABS1	50	VSC system, ABS MAIN1, ABS MAIN2 and ABS MTR
16	RH J/B-B	30	AM2, DOOR FR, and DOOR RR
17	VGRS	40	VGRS
18	MAIN	30	H-LP R LWR and H-LP L LWR
19	STARTER	30	Starting system
20	LH J/B-B	30	FL DOOR, RL DOOR and RND NO.3
21	P/I-B	60	Multi-port fuel injection system/ sequential multiport fuel injection system
22	EPS	80	EPS
23	ALT	150	RH J/B-AM, LH J/B-AM, E/G-AM, RR JB, HEATER, DEFOG, FAN1, FAN2, ABS2, ABS MOTOR, ABS MAIN1, and ABS MAIN2

Fuse		Ampere	Circuit
24	RR J/B	80	STOP LP R, STOP LP L, RR-B, RR TAIL, RR FOG, RR-IG1, PSB, and RR S/SHADE
25	GLW PLG1	50	Glow plug heater
26	RH J/B-AM	80	AM1, OBD, STOP SW, TI&TE, PWR OUTLET, FR P/SEAT RH, STR LOCK, ECU-IG RH, RH-IG, ACC, CIG, SECURITY, FR S/HER RH and AIR SUS
27	ABS2	30	VSC, ABS
28	DEFOG	50	Rear window defogger, Noise filter
29	CDS	40	F: CDS
30	FAN1	40	Electric cooling fans
31	HEATER	50	Air conditioning system
32	GLW PLG2	50	Glow plug heater
33	E/G-AM	60	H-LMP CLN, FR CTRL-AM and A/C COMP
34	LH J/B-AM	80	S/ROOF, FR P/SEAT LH, TV, FR S/HTR LH, FR WIP, H-LP LVL, LH-IG, FUEL OPEN, A/C, PANEL and LH-B
35	FAN2	60	———

n Engine compartment (Type B)

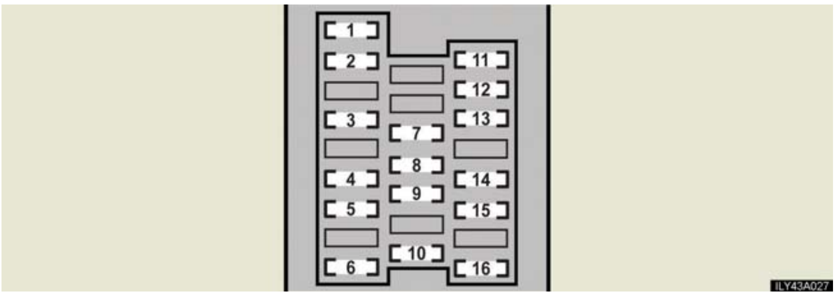


6: only for GS430 equipped with active stabilizer suspension system

Fuse		Ampere	Circuit
1	FR CTRL-B	25	Headlight high beam, horn
2	A/F	15	Exhaust system
3	ETCS	10	Multiport fuel injection system/ sequential multiport fuel injection system
4	ALT-S	7.5	Charging system
5	H-LP CLN	30	Headlight cleaner
6	STB-AM	30	DC/DC converter
7	A/C COMP	7.5	Air conditioning system
8	DEICER	25	———
9	FR CTRL-AM	30	Front fog lights, parking lights, windshield washer
10	IG2	10	Ignition system
11	EFI NO.2	10	Fuel system, exhaust system

Fuse		Ampere	Circuit
12	H-LP R LWR	15	Headlight low beam (right)
13	H-LP L LWR	15	Headlight low beam (left)
14	F/PMP	25	Fuel system
15	EFI	20 (GS430) 25 (GS350)	Multiport fuel injection system/ sequential multiport fuel injection system
16	INJ	20	Multiport fuel injection system/ sequential multiport fuel injection system
17	H-LP UPR	15	Headlight high beams
18	HORN	10	Horns
19	WASHER	20	Windshield washer
20	FR TAIL	10	Parking lights
21	FR FOG	15	Front fog lights

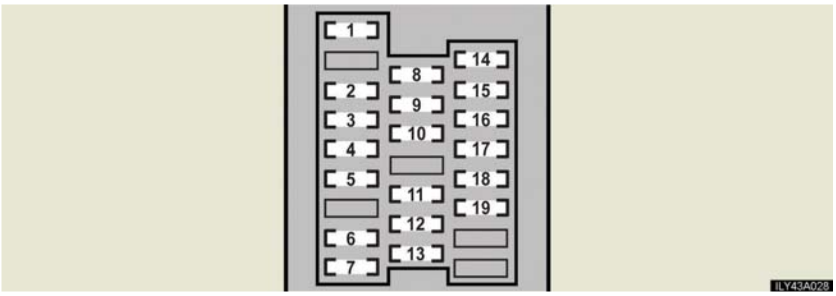
n Driver’s side instrument panel



Fuse		Ampere	Circuit
1	FR P/SEAT LH	30	Power seat system
2	A/C	7.5	Air conditioning system
3	TV	7.5	Audio system, Air conditioning system, Rear view monitor system
4	TRK OPN	10	Trunk lid opener
5	LH-B	10	Theft deterrent system
6	S/ROOF	25	Moon roof
7	PANEL	7.5	Steering switch illumination, Audio system, Glove box light, Automatic transmission selector lever illumination, Console box light, Adaptive variable suspension switch illumination, Cigarette lighter illumination, Air conditioning system, VSC off switch illumination, Driving pattern selector switch, Seat heater or Heated and ventilated seat switches, Register ILL RH, Register ILL LH, Register ILL CTR
8	FUEL OPEN	10	Fuel filler door opener, Trunk lid opener

Fuse		Ampere	Circuit
9	ECU-IG LH	10	VSC system, ECB system, Yaw rate and G sensor, Steering sensor, Cruise control system, Dynamic radar cruise control system, EPS system, VGRS system, Rear view monitor system, Four-wheel drive system, Front controller, Moon roof, Rain sensor
10	FR S/HTR LH	15	Seat heater or Heated and ventilated seats
11	RR DOOR LH	20	Rear left door control system (Power door lock system, Door courtesy light, Power window)
12	FR DOOR LH	20	Front left door control system (Power door lock system, Power rear view mirror control system, Door courtesy light, Outside rear view mirror heater, Power window)
13	RAD NO.3	10	Audio system
14	H-LP LVL	7.5	AFS, Automatic headlight leveling control system
15	LH-IG	10	Charging system, Headlight cleaners, Exhaust gas sensor, Rear window defogger, Electric cooling fans, Rear left door control system, Front left door control system, Emergency flashers, Automatic transmission, Seat belt pretensioners, Intuitive parking assist
16	FR WIP	30	Windshield wipers and washer

n Passenger’s side instrument panel

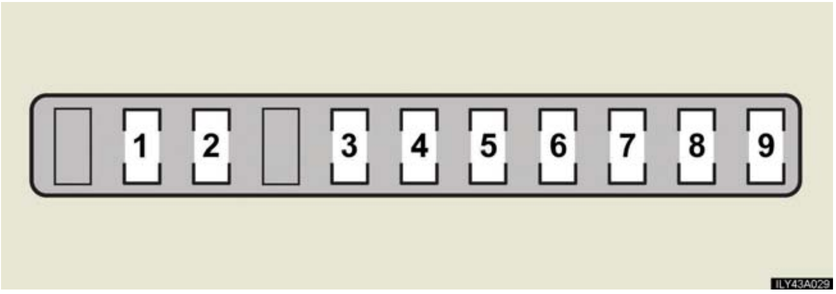


Fuse		Ampere	Circuit
1	FR P/SEAT RH	30	Power seat system
2	OBD	7.5	On-board diagnosis system
3	STOP SW	7.5	Stop/tail lights, Multi-port fuel injection system/sequential multiport fuel injection system, Starting system, ECB system, VSC system, Shift lock system
4	AM1	7.5	———
5	TI&IE	20	Power tilt and telescopic steering wheel, Multiplex communication system
6	SECURITY	7.5	Smart access system with push-button start
7	STR LOCK	25	Steering lock system
8	GAUGE	7.5	Gauges and meters
9	IGN	10	Multi-port fuel injection system/ sequential multiport fuel injection system, SRS airbag system, Stop/tail lights, Steering lock system, ECB system, Lexus Link System ECU, Occupant classification system ECU

Fuse		Ampere	Circuit
10	ACC	7.5	Multiplex communication system, Smart access system with push-button start, Rear view monitor system, Audio system, Air conditioning system, Lexus Link System ECU
11	CIG	15	Cigarette lighter
12	PWR OUTLET	15	Power outlet
13	AIR SUS	20	Adaptive variable suspension system
14	RR DOOR RH	20	Rear right door control system (Power door lock system, Door courtesy light, Power window)
15	FR DOOR RH	20	Front right door control system (Power door lock system, Power rear view mirror control system, Door courtesy light, Outside rear view mirror heater, Power window), Multiplex communication system
16	AM2	15	Starting system
17	RH-IG	7.5	Seat heater switches, Front right door control system, Rear right door control system, Capacitor, Combination switch, Seat belt pretensioners, Intuitive parking assist
18	FR S/HTR RH	15	Seat heaters and ventilators

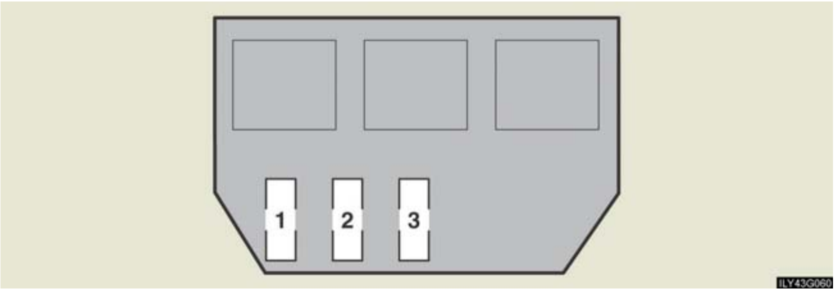
Fuse		Ampere	Circuit
19	ECU-IG RH	10	Electric tilt and telescopic steering, Multiplex communication system, Smart access system with push-button start, Audio system, Air conditioning system, Shift lock system, Tire pressure warning system, Combination switch, Front stabilizer, Rear stabilizer, DC/DC converter

n Luggage compartment



Fuse		Ampere	Circuit
1	RR S/SHADE	7.5	Rear sunshade
2	PSB	30	Pre-collision seat belt
3	RR-IG2	10	———
4	RR-IG1	10	Pre-collision seat belt, seat belt pre-tensioners
5	RR-B	10	Trunk light
6	RR FOG	7.5	———
7	STOP LP L	10	Stoplights, back-up light
8	STOP LP R	10	High mounted stoplights
9	RR TAIL	10	Tail lights, license plate lights

Luggage compartment (vehicles with active stabilizer suspension system)



Fuse		Ampere	Circuit
1	STB FR	50	Front stabilizer
2	STB RR	30	Rear stabilizer
3	STB DC/DC	30	DC/DC converter

After a fuse is replaced

- If the lights do not turn on even after the fuse has been replaced, a bulb may need replacement. (→P. 438)
- If the replaced fuse blows again, have the vehicle inspected by your Lexus dealer.

If there is an overload in the circuits

The fuses are designed to blow before the entire wiring harness is damaged.

CAUTION

To prevent system breakdowns and vehicle fire

Observe the following precautions.
Failing to do so may cause damage, and possibly a fire or injury.

- Never use a fuse of a higher amperage rating than indicated, or use any other object in place of a fuse.
- Always use a genuine Lexus fuse or equivalent.
  Never replace a fuse with a wire, even as a temporary fix.
  This can cause extensive damage or even fire.
- Do not modify fuses or the fuse box.

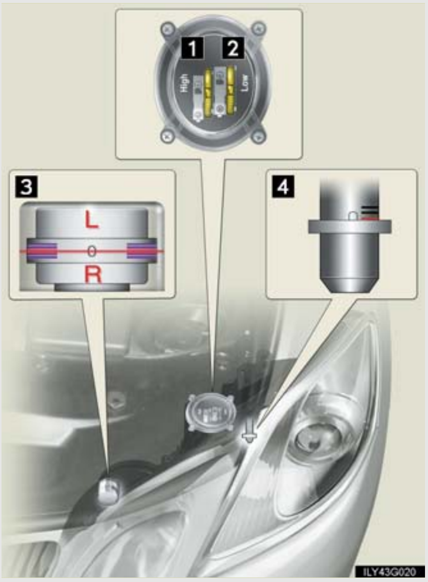
NOTICE

Before replacing fuses

Have the cause of electrical overload determined and repaired by your Lexus dealer.

Headlight aim

n Gauges



1. High beam vertical position
2. Low beam vertical position
3. High beam horizontal position
4. Low beam horizontal position

n Adjustment bolts



1. High beam horizontal adjustment
2. High beam vertical adjustment
3. Low beam adjustment bolt A
4. Low beam adjustment bolt B

n Before checking the headlight aim

STEP 1 Make sure the vehicle has a full tank of gas and the area around the headlight is not deformed.

STEP 2 Park the vehicle on level ground.

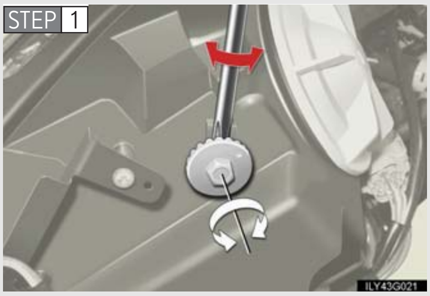
STEP 3 Sit in the driver's seat.

STEP 4 Bounce the vehicle several times.

n **Adjusting the headlight aim**

▶ Low beam (vertical adjustment)

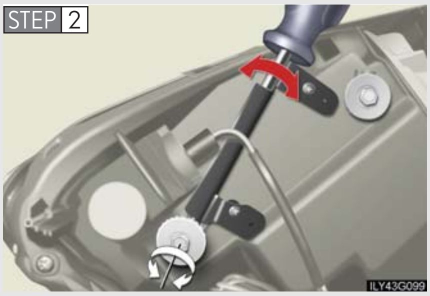
STEP 1



Using a Phillips-head screw-driver, turn adjustment bolt A so that the bubble is within the 2 center lines.

Remember the turning direction and the number of turns.

STEP 2



Turn bolt B the same number of turns and in the same direction as step 1.

▶ Low beam (horizontal adjustment)

Turn adjustment bolt A so that the red line on the gauge is in the middle of the "0" mark (within the blue lines to either side of the gauge).

▶ High beam (vertical and horizontal adjustment)

Turn each adjustment bolt in either direction so that the bubble in within the 2 center lines (vertical), and the red line on the gauge is in the middle of the "0" mark (within the blue lines to either side of the gauge) (horizontal).

If you feel that there is a large deviation, have the headlight aim adjusted at a Lexus dealer.

Light bulbs

You may replace the following bulbs yourself. For more information about replacing other light bulbs, contact your Lexus dealer.

Prepare a replacement light bulb.

Check the wattage of the light bulb being replaced. (→P. 507)

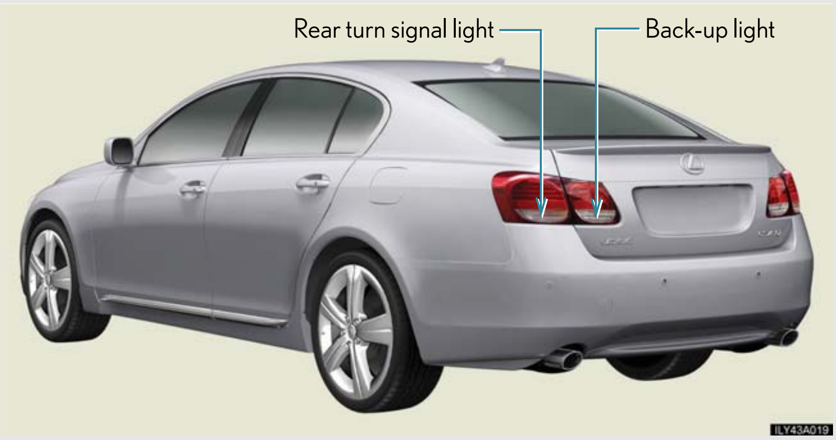
Remove the engine compartment cover if necessary.

→P. 378

Front bulb locations



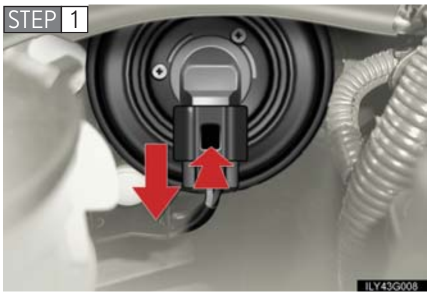
Rear bulb locations



Replacing light bulbs

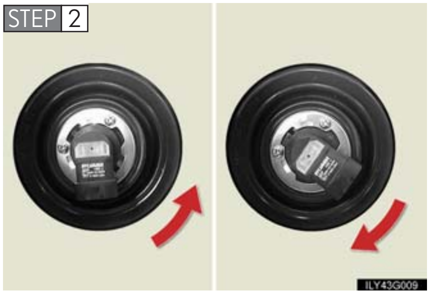
Headlight high beam

STEP 1



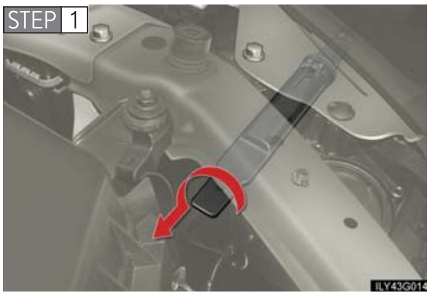
Unplug the connector while pushing the lock release.

STEP 2



Turn the bulb base counterclockwise to remove it.

Parking light

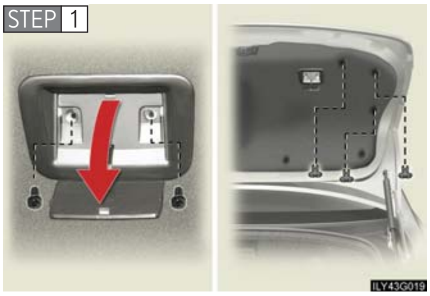


Turn the bulb base counterclockwise.

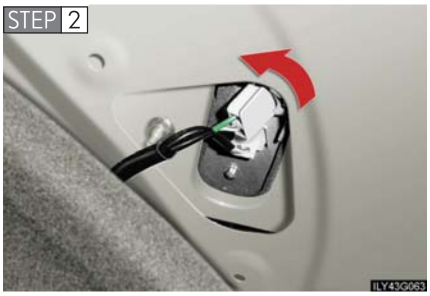


Remove the light bulb.

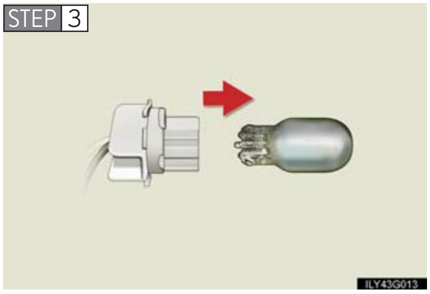
Back-up light



Open the trunk lid. Remove the trunk handle and panel cover clips.



Partly remove the trunk panel cover and turn bulb bases counterclockwise.

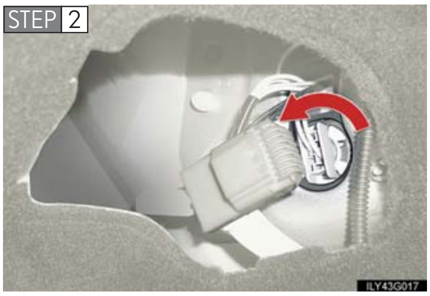
STEP 3


Remove the light bulb.

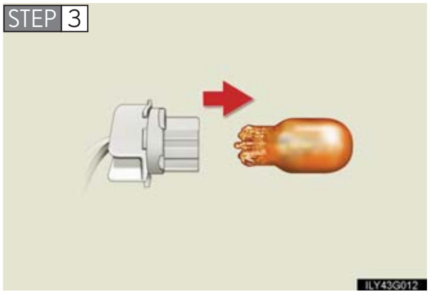
n Rear turn signal light

STEP 1


Open the trunk lid and remove the cover.

STEP 2


Turn the bulb base counterclockwise.

STEP 3


Remove the light bulb.

Bulbs other than the above

If any of the bulbs listed below has burnt out, have your Lexus dealer replace it.

- Headlight low beams (high-intensity discharge bulbs)
- Fog lights
- Front turn signal lights
- Front side marker lights
- Stop/tail lights
- Tail lights
- Rear side marker lights
- High mounted stoplight
- License plate lights

Condensation build-up on the inside of the lens

Contact your Lexus dealer for more information in the following situations. Temporary condensation build-up on the inside of the headlight lens does not indicate a malfunction.

- Large drops of water are built up on the inside of the lens.
- Water has built up inside the headlight.

LED light bulbs

The tail, tail/stop and high mounted stoplights consist of a number of LEDs. If any LEDs burn out, take your vehicle to your Lexus dealer to have the light replaced.

If two or more LEDs in a stoplight burn out, your vehicle may not conform to local laws (SAE).

High-intensity discharge (HID) headlights

If voltage to the high-intensity discharge bulbs is insufficient, the light may not come on, or may go out temporarily. The high-intensity discharge bulbs will come on when normal power is restored.

CAUTION

Replacing light bulbs

- Turn off the headlights. Do not attempt to replace the bulb immediately after turning off the headlights.
  The bulbs become very hot and may cause burns.
- Do not touch the glass portion of the light bulb with bare hands. Hold the bulb by the plastic or metal portion.
  If the bulb is scratched or dropped it may blow out or crack.
- Fully install light bulbs and any parts used to secure them. Failing to do so may result in heat damage, fire, or water entering the headlight unit. This may damage the headlights or cause condensation to build up on the lens.
- Do not attempt to repair or disassemble light bulbs, connectors, electric circuits or component parts.
  Doing so may result in serious injury due to electric shock.

High-intensity discharge (HID) headlights

- Contact your Lexus dealer before replacing high-intensity discharge headlights (including light bulbs).
- Do not touch the high-intensity discharge headlight's high voltage socket when the headlights are turned on. An extremely high voltage of 20000V will be discharged and could result in serious injury or death by electric shock.

To prevent damage or fire

Make sure bulbs are fully seated and locked.